

# Ikegami

HDN-X10

Genuine HD Production System

**Editcam HD**

HDTV Tapeless Camera/Recorder **HDN-X10**



HDTV Tapeless Camera/Recorder

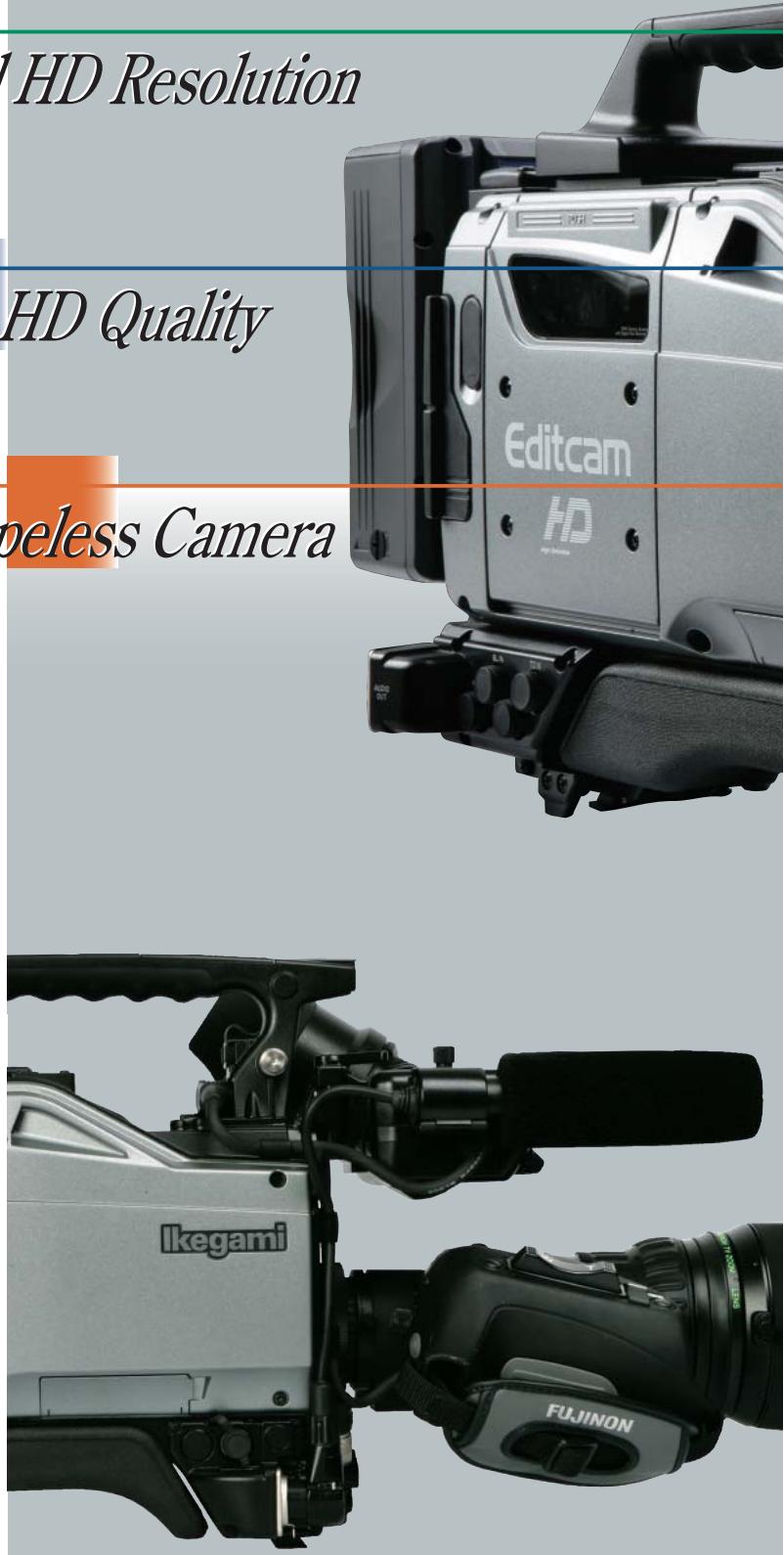
# HDN-X10

The HDN-X10 is a sophisticated camera, optimized for all kinds of shooting in the production environment, producing non-linear recordings to seamlessly integrate with high end HD post production.

*Genuine Full HD Resolution*

*Genuine HD Quality*

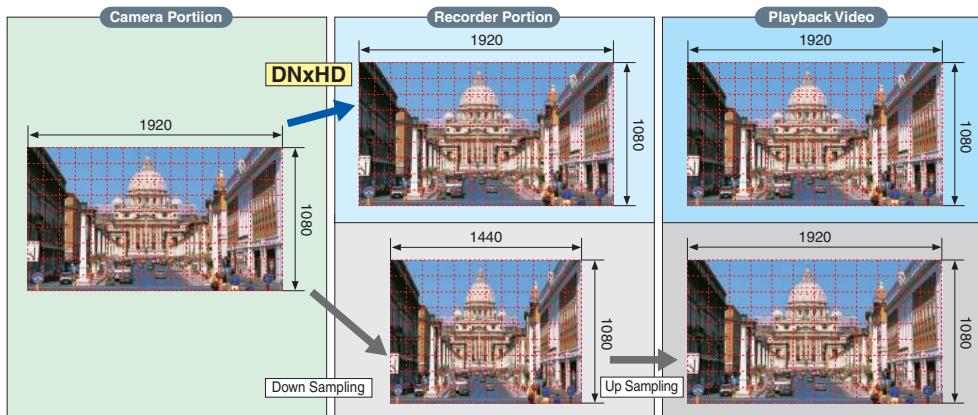
*Genuine Tapeless Camera*



# Technology to realize Genuine Full HD Resolution

## Full HD 1920×1080 Recording

High quality 2,500,000 pixel COMS sensors capture Full HD 1920×1080 pixel HDTV image, and the image is recorded with DNxHD compression without down sampling. HDTV resolution will not be reduced in the acquisition stage.



## Avid DNxHD Codec

Avid developed DNxHD Codec which provides high quality video image with evolutionary technology. Uncompressed 1.2Gbps HD SDI signal is compressed efficiently to a file size about the same as an uncompressed SD SDI signal. The DNxHD Codec supports 8-bit and 10-bit quantization at 145Mbps and 220Mbps respectively, allowing the user to balance performance versus file size for the particular application. The HDN-X10, Editcam HD supports 8bit/145Mbps compression currently and will support 220Mbps compression in the near future. Not only 1080/59.94i, but also 1080/50i, 1080/23.98p, 720/59.94p and 720/50p formats are supported.

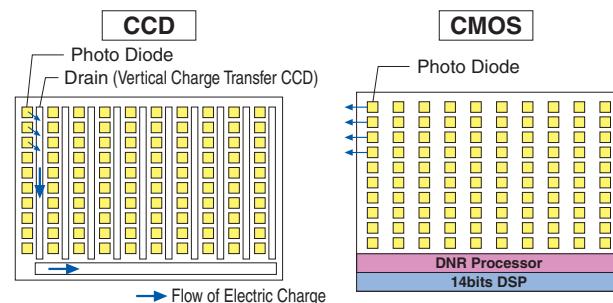
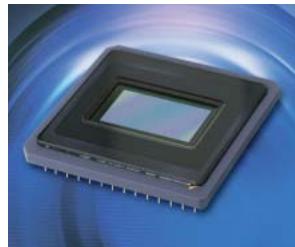


\* Image Samples

# Technology to realize Genuine HD Quality

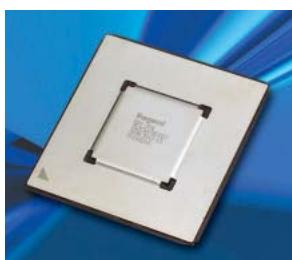
## CMOS Sensors

The CMOS Sensor doesn't use vertical charge transfer like a CCD Sensor so no vertical smear is generated in the CMOS Sensor. By incorporating System-on-Chip technology, these CMOS Sensors include Digital Noise Reduction, Digital Low-pass Filter and 14-bit DSP Circuit inside of the Sensor itself to reduce Random Noise and Fixed Pattern Noise, as well as, improving Dynamic Range.



## Chip C4 ASIC

The DSP IC named "Chip C4" employs up to 38-bit digital processing, and includes technology from Ikegami's vast experience in developing successful broadcast cameras over the years, including 'Ikegami Color'. Nonlinear processing such as White Shading and Gamma Curve Compensation are performed digitally, providing stable high quality pictures.



## YUV 4:2:2 Color Sampling

4:2:2 Digital Component Recording ensures color resolution to meet the demand for the top end production such as HD production and Chroma-key Effects.

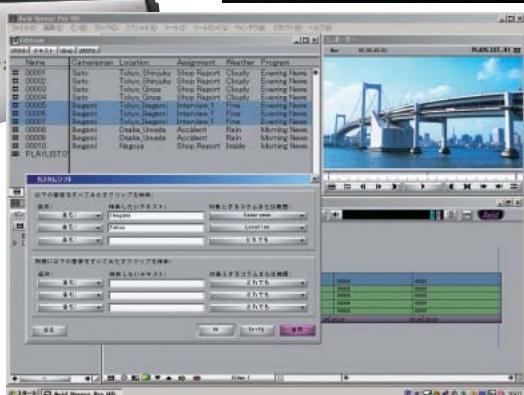
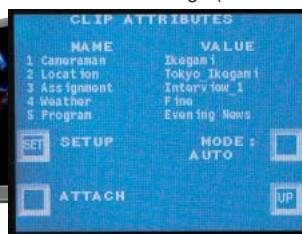
# Technology to realize Genuine Tapless Camera



## Full Compatibility with Avid NLEs (Nonlinear Editors)

Recorded material (Video/Audio/Meta-data) in FieldPak2 can be edit by Avid NLE right after the FieldPak2 is mounted onto the Avid NLE. Since neither Capturing nor File Copying is required, work efficiency is raised significantly.

Meta-data Page (HDN-X10)



Meta-data Table (Avid NLE) \*

Stored Meta-data on the camera is displayed in the bin summary on the NLE application. By inputting related data for the material such as Cameraman Name, Shooting Location or Program Name, these Meta-data can be confirmed and Keyword search is available during editing. It supports easier editing or easier material management.

## Recording Media

The removable media, FieldPak2, employs a cost effective Hard Disk Drive with anti-vibration/anti-shock package. Operation is almost the same as SDTV, even though HDTV has a much higher data rate recording/playing. Not only current Hard Disk Drive, FieldPak2 has been designed to employ any media which will be de facto standard from the media capacity or read/write speed point of view.



## Unique Nonlinear Recording



### ■ Retro-loop

The HDN-X10 can make loop-recording for video and audio to FieldPak2 with a preset cache time. An important shot can be recorded even though the REC button is pressed after an event occurs.

### ■ Time-lapse Recording

Shooting for very slow moving object like Blooming of flower, movement of cloud, or clay animation, is possible using interval frame recording.

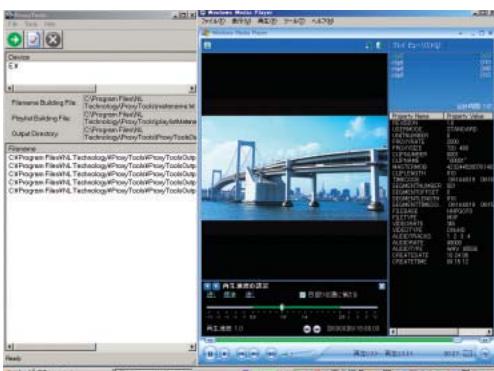
### ■ Intelligent Recording

The HDN-X10 can always access the full capacity of FieldPak2. If REC button is pressed when recorded clip is playing, the played clip will not be overwritten, and recording will start immediately.

## System Application

### Proxy (Option)

Create and record low bit rate (350Kbps to 3Mbps selectable) Windows Media9, Proxy Video Clip File in FieldPak2. Proxy Video includes Meta-data input by camera operation. When Proxy Video is transferred from remote location via IP network, not only Video Clip but also Meta-data is also transmitted.



Proxy Viewer/Windows Media Player Screen Shot \*

### USB Keyboard Support(Option)

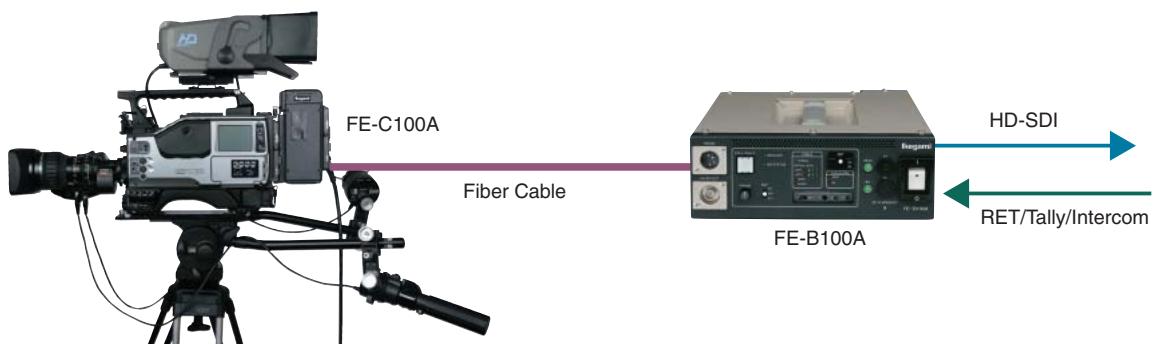
By connecting conventional USB Keyboard to USB Port, Meta-data input and Simple Editing Control are available. Play List Data edited on camera head can be imported into Avid NLE as a sequence.



\* Image Samples

## Optical Fiber Transmission System (Option)

By attaching FE-C100A Fiber Camera Adaptor, HD-SDI with embedded Audio can be transmitted up to 2km (1.2mile) to the FE-B100A Base Station. Return Video (HD-SDI), Intercom, Genlock and camera control are also supported.



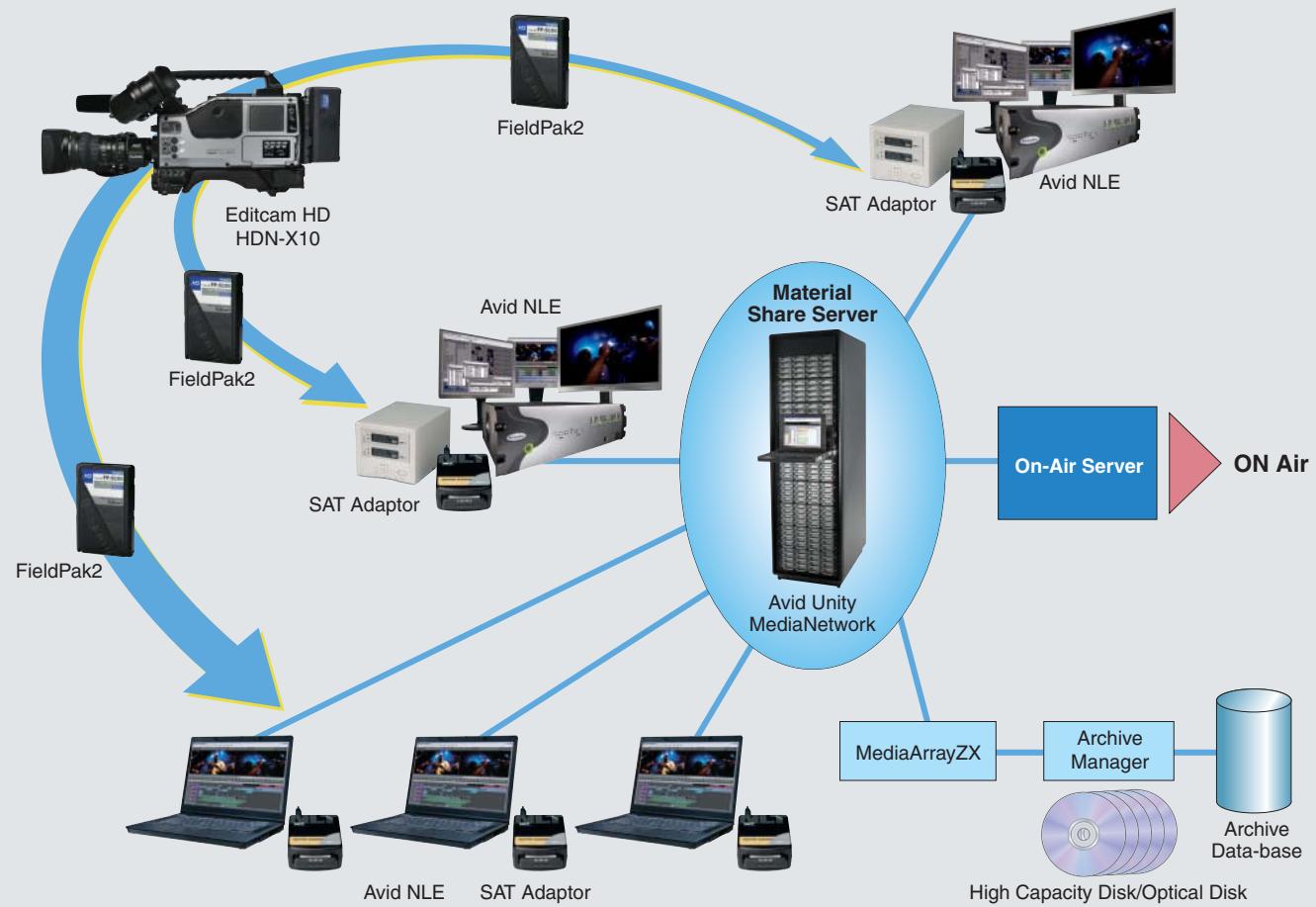
## Wireless Camera System (Option)

By attaching PP-57 compact digital microwave transmitter, Wireless Camera operation is available. Transmission distance is 1km(0.6mile) or more(depending on antenna configuration and environmental factors).

- \* 7GHz Band or 10GHz Band transmission requires transmission licence from relevant authority.
- \* PF-504 Microwave Receiver Unit is required.



## Ikegami HDTV Tapeless Network Solution (Translation omitted)



## *User-Conscious Features* (Translation omitted)





## Removable Media



FieldPak2 (120GB)

Hard Disk Type

RAMPAk (32GB)

Flash Memory Type

## FieldPak Adaptor



SAT-200 (SCSI)

SAT-110 (USB2.0)

## Proxy Board



PRX-DNS10

## VTR Adaptor



VTA-207V

## HD Fiber Optics Transmission System



Camera Fiber Adaptor for HDTV Camera/Recorder

FE-C100A



Base Station

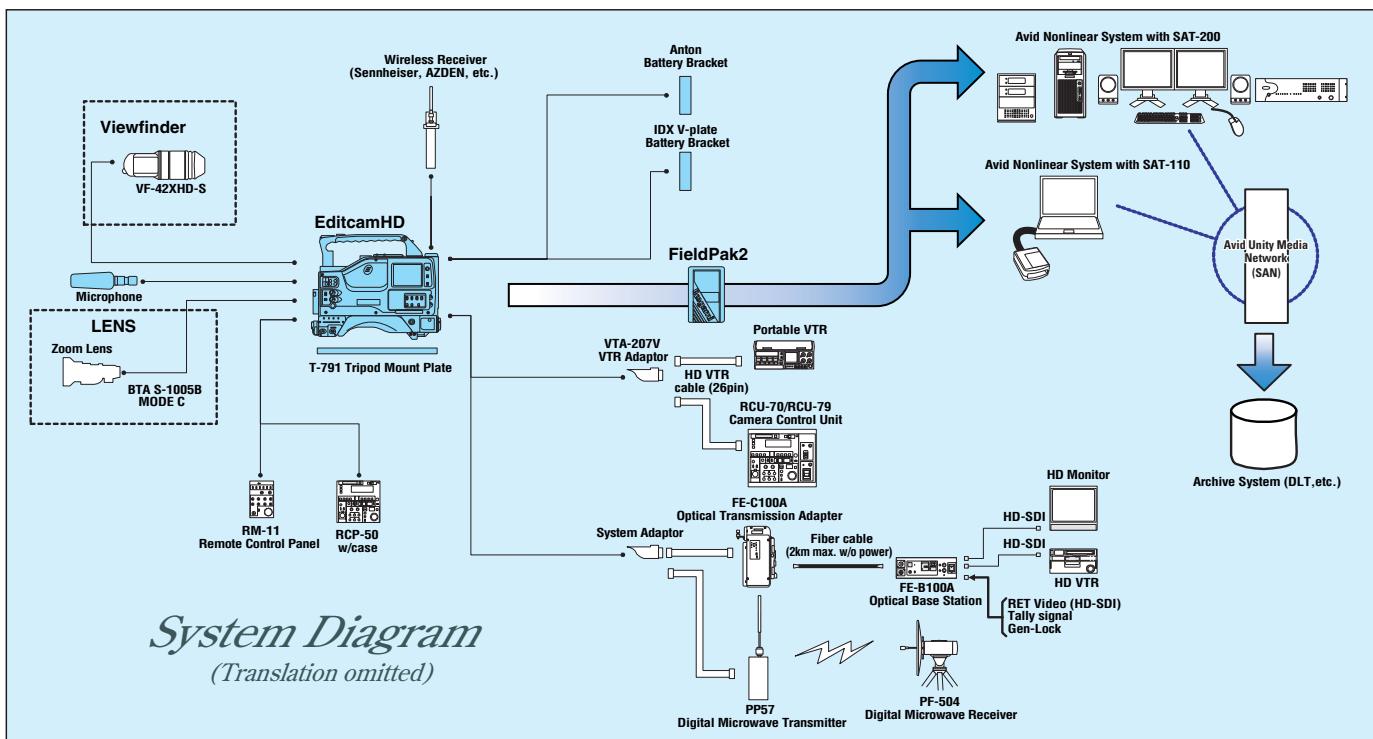
FE-B100A

## Remote Control Unit



RM-50

# HDTV Tapeless Camera/Recorder HDN-X10



## Rating/Performance

### < Rating >

Scanning System	1080 lines 59.94Hz 2:1 interlaced 1920(H)X1080(V)															
	720 lines 59.94Hz 1:1 non-interlaced 1280(H)X720(V)															
	1080 lines 23.98Hz 1:1 non-interlaced 1920(H)X1080(V)															
	1080 lines 50Hz 2:1 interlaced 1920(H)X1080(V)															
	720 lines 50Hz 1:1 non-interlaced 1280(H)X720(V)															
Image sensor	2/3-inch, 2,500,000-pixel CMOS Sensor															
Optical System	2/3-inch, R,G,B prism optics															
Sensitivity	F8 / 2000 lx															
Lens Mount	BTA-S1005B															
Optical Filter	<table border="1"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>ND</td> <td>100%</td> <td>25%</td> <td>6.2%</td> <td>1.5%</td> </tr> <tr> <td>CC</td> <td>3200K</td> <td>4300K</td> <td>6300K</td> <td>CROSS</td> </tr> </tbody> </table>		1	2	3	4	ND	100%	25%	6.2%	1.5%	CC	3200K	4300K	6300K	CROSS
	1	2	3	4												
ND	100%	25%	6.2%	1.5%												
CC	3200K	4300K	6300K	CROSS												
Viewfinder	2-inch B/W Viewfinder															
Operating Voltage	+10VDC to +16VDC															
Operating Temperature	0°C~40°C (57°F~104°F)															
Humidity	15% to 80% (Non-condensing)															
EMI Compliance	FCC Class-A, CE Class-A															
Dimensions	W138.5XH250.5XD320 mm (W5.45XH9.9XD12.6 inches)															
Weight	approx. 4.5kg (10.0 lbs)															

### < Performance >

S/N	54dB
Resolution/	1000TVL/45% or more (1080/59.94i 800TVL, 27.5MHz)
Modulation Depth	700TVL/40% or more (720/59.94p 560TVL, 28.875MHz)
	1000TVL/45% or more (1080/23.98p 800TVL, 27.5MHz)
	1000TVL/45% or more (1080/50i 800TVL, 27.5MHz)
	700TVL/40% or more (720/50p 560TVL, 28.875MHz)
Registration error	0.02% or less (without lens)
Power consumption	Camera Head: approx. 40W 2-inch Viewfinder: approx. 6W

### < Input Signals >

Audio signal	2ch XLR-3pin (0dBu/-40dBu/-60dBu)
Microphone	XLR-3pin (-40dBu/-60dBu), XLR-5pin: Factory Option
Timecode	BNC, SMPTE-12M-1995
Genlock	SMPTE-274M, SMPTE-296M (shared with SDTV)

### < Output Signals >

HD-SDI signal	BTA-S004B, SMPTE-292M
Monitor signal	Y(BNC connector, 75Ω) or SDTV VBS selectable
VCR signal	BTA-S1005B (Optinal VTA-207V required)
Audio Signal	XLR-5pin(0dBu)
Earphone	2ch 3.5mm stereo jack
USB connector	2-port USB2.0
Genlock	SMPTE-274M, SMPTE-296M (shared with SDTV)

### < Recording Section >

Video Signal	1080/59.94i, 720/60p, 1080/23.98p, 1080/50i, 720/50p
Video Compression	Avid DNxHD 145Mbps (Avid DNxHD 220Mbps will be supported in the future)
Typical Recording Time	approx. 108 minutes (120GB FieldPak2 at 1080/59.94i)
Audio Sampling Rate	16-bit, 48kHz or 44.1kHz selectable

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